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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CHANG, VICTOR S	

ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,462	STREY ET AL.	
	Examiner	Art Unit	
	VICTOR S. CHANG	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-58* is/are pending in the application.

4a) Of the above claim(s) *29-32 and 36-58* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-28, 33-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/19/2009 has been entered. No claim has been amended. Claims 25-28 and 33-35 are active.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. In response to the amendment to claim 25 to incorporate limitation from claim 27, the grounds of rejection have been updated as set forth below. In particular, the present Supplemental Office action includes the grounds of rejection of claim 27, which is inadvertently misspelled as "claim 28" in section 6 in the prior Office action mailed 7/8/2008.

Election/Restrictions

4. Applicants' are reminded that in a previous response filed 9/24/2007 "water" is elected as the first fluid species (K1), "ethane" as the second fluid species (K2), and "octaethylene glycol monodedecyl ether" as the amphiphilic material (K3).

Rejections Based on Prior Art

5. Claims 25-28, 33 and 34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nielsen et al. [US 5419487].

Nielsen's invention relates to a water-borne coating composition (K1) and a compressed fluid dispersed therein (K2). The water-borne coating composition contains a water-soluble polymer (liquid state of matter) [col. 6, ll. 46]. The compressed fluid is a supercritical fluid compressed fluid, such as ethane [col. 1, ll. 7-13]. The liquid compressed fluid phase is finely dispersed into the liquid mixture. Forming and maintaining the finely dispersed liquid compressed fluid phase (pools) in the liquid mixture may be aided by using a surfactant (K3) [col. 17, ll. 22-44].

For claims 25 and 34, Nielsen teaches in the Background section that it is known that upon decompression to a subcritical state, the compressed fluid expands and becomes gas [col. 2, ll. 39-41]. Since the expanded gas is enclosed and interfaced with the water-borne coating composition via the surfactant, it is inherently a foamed material. Further, the examiner takes Official notice that a surfactant is inherently an amphiphilic material comprising components (blocks) facing aqueous liquid and non-aqueous liquid. Nielsen teaches all the features of the claimed invention. Regarding the newly incorporated limitation "the average foam bubble size is smaller than 10 gm", since the bubble size is recited as a transitional state from a nearly-critical or supercritical state to a subcritical state, and Nielsen teaches the same transitional state as claimed, the average foam bubble size is deemed to be either anticipated by the same chemistry during the transitional process, or obviously provided by practicing the invention of prior art.

For claim 26, Nielsen teaches that water is used to achieve low viscosity [col. 4, ll. 58-59].

For claim 27, Nielsen teaches in Example 1 a water-borne composition containing 45 w% water (K1). Nielsen is silent about the bubble density and total volume of the foam. However, since Nielsen's supercritical fluid containing liquid mixture reads on all the features of the claimed invention, and the composition is processed through the same transitional state from a nearly-critical or supercritical state to a subcritical state, the resultant features of the foamed material during the transitional process are deemed to be either anticipated, or obviously provided by practicing the invention of prior art.

For claim 28, since Nielsen teaches a water-borne coating composition (K1), its polarity is deemed to be inherently disclosed.

For claim 33, ethane is inherently a hydrocarbon.

6. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nielsen et al. [US 5419487] in view of Anderson et al. [US 20050163924].

The teachings of Nielsen are again relied upon as set forth above.

For claim 35, Nielsen is silent about the composition of surfactant as octaethylene glycol monododecyl ether. However, Anderson's invention relates to various well known functionally equivalent surfactants including octaethylene glycol monododecyl ether [claim 6]. It would have an obvious substitution to one of ordinary skill in the art to use a well known alternative surfactant such as octaethylene glycol monododecyl ether, because the selection of a known equivalent material based on its suitability for its intended use supported a *prima facie* obviousness determination. See MPEP § 2144.07.

Response to Arguments

7. Applicants argue at Remarks pages 8-9:

> "Nielsen discloses a liquid mixture that must comprise a solvent fraction and a coupling agent. By contrast, Applicants' Claim 25 recites "a first fluid (K1) forming the matrix, a second fluid (K2) forming the foam bubbles (Z1), and an amphiphilic material (K3)." Applicants disclose at page 3, 1st full paragraph "[u]nder the thermodynamic parameters of the preparation, the first fluid involved is in a liquid state of matter, preferably in a low-viscosity state. The second fluid involved is **gaseous under the thermodynamic parameters of the preparation**." Applicants' composition does not comprise the "compressed fluid" disclosed by Nielsen."

However, claim 1 recites a "foamed" material obtained in a transitional state, and Nielsen teaches the same mixture being processed through the same transitional state. Under the transitional state of the "foamed" material, the second fluid is necessarily in gaseous state.

Applicants argue at page 9:

> "This ability to undergo a sudden and large drop in pressure is afforded by the manner in which the compositions of Nielsen are produced. This stored energy, due to super-saturation, creates a very large driving force that is responsible for the re-gasification of the formerly supercritical fluid. This large release of energy provides a mechanical force that is exceedingly large and would make it impossible to form a micro- or nano-foam."

However, absent any credible evidentiary support, applicants analysis of prior art ignore that Nelson teaches the same chemical mixture as the claimed invention, which necessarily has the same inherent thermodynamic properties to the same chemistry when it is processed through the same transitional state. There is no reason whatsoever to believe that Nelson's decompression process must follow a different thermodynamic path.

For the same reasons set forth above, applicants' arguments at pages 10-11 appear to be analysis in vacuum and lack any credible scientific basis of why the same chemical mixture must thermodynamically respond to the same decompression process differently.

Finally, applicants' argument directed to features of Anderson not relied upon is misplaced. The collective teachings of prior art render the claimed invention obvious as set forth above.

Conclusion

8. This is a continuation of applicant's earlier Application No. 10/540462. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VICTOR S. CHANG whose telephone number is (571)272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1794